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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|--------------------------|---------------------|------------------|
| 10/098,693 | 03/15/2002 | William A. Whittenberger | 555-02 | 6139 |

7590 06/02/2004
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EXAMINER

COCKS, JOSIAH C

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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3749

DATE MAILED: 06/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/098,693

Applicant(s)

WHITTENBERGER, WILLIAM A.

Examiner

Josiah Cocks

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 January 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,5-16 and 18-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 11-14,21 and 26 is/are allowed.
- 6) ☒ Claim(s) 1,3,5-10,15,16 and 18-20 is/are rejected.
- 7) ☒ Claim(s) 22-25 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. Receipt of applicant's amendment filed 1/12/2004 is acknowledged.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 3, 5-10, 15, 16, and 18-20 are rejected under 35 U.S.C. 102(b) as being anticipated by *Betta et al.* (US # 5,512,250).

Betta et al. discloses a catalytic combustor as described in applicant's claims 1, 3, 5-10, 15, 16, and 18-20 including a plurality of corrugated strips (42 and 44) alternating with a plurality of flat strips (40), wherein the corrugated and flat strips define a plurality of channels (46 and 48) (see Figs. 4-8 and col. 16, lines 21-25), wherein the combustor has an inlet end and an outlet end, wherein some of the channels are coated with catalyst and wherein some of the channels are not coated with catalyst (see col. 16, lines 25-42). *Betta et al.* further discloses additional strips, coated with catalyst, and located within one of said coated channels, in a vicinity of the inlet end (see additional strips as illustrated in Fig. 4).

In regard to the limitations of applicant's claims regarding a thermal barrier, *Betta et al.* notes that it is desirable that the catalyst coated channels and the catalyst-free/uncoated channels

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have a structures and supports that result in promoting combustion in the catalyst channels while minimizing this combustion in the non-coated channels (see col. 6, lines 7-17 and col. 12, lines 27-59). These supports may be in the form of washcoat layers made of alumina or zirconia.

Applicant identifies in the specification in the paragraph spanning pages 9 and 10 that the thermal barrier may be formed of alumina or zirconia, such as used in washcoats typical of the prior art simply without the catalyst metals. *Betta et al.* discloses the use of washcoat supports that function to improve combustion stability and are formed as layers and may be made of alumina or zirconia (see col. 12, lines 63-64). These washcoat layers are formed and applied separately from the catalyst metals (see col. 13, lines 1-9). The examiner considers that these washcoat layers would function as the thermal barrier recited in applicant's claims.

Betta et al. further notes that the use of non-catalytic barrier layers are known in the art (see col. 13, lines 13-18) and it is understood there is a leading zone in the catalytic structure that is distinct from the remaining zones in order to improve light off characteristics (see col. 13, lines 59-65) and cites to prior U.S. patent 5,232,357 for the type of diffusion layer considered. The examiner considers the *Betta et al.* reference to being incorporating by reference the type of diffusion layers of U.S. Patent 5,232,357. This U.S. patent notes that the diffusion barrier layer may also be made of alumina or zirconia (see U.S. 5,232,357, col. 9, lines 34-55). The examiner regards these disclosures as teaching that a portion of some of the coated channels include a barrier that may be made of alumina or zirconia, may be located only in the inlet end, and would inhibit heat transfer from a coated channel to an uncoated channel and thus be considered a thermal barrier.

Allowable Subject Matter

4. Claims 11-14, 21, and 26 are allowed.
5. Claims 22-25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

6. Applicant's arguments filed 1/12/2004 in regard to claims 1, 3, 5-10, 15, 16, and 18-20 have been fully considered but they are not persuasive. As noted in item 3 above, the examiner considers that the washcoat and diffusion barriers identified by *Betta et al.* would function as the thermal barrier recited by applicant because they are made of the same material, alumina or zirconia, identified as a suitable thermal barrier material by applicant.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period

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will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Josiah Cocks whose telephone number is (703) 305-0450. The examiner can normally be reached on weekdays from 7:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ira Lazarus, can be reached at (703) 308-1935. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0861.

jcc
May 31, 2004


JOSIAH COCKS
PRIMARY EXAMINER
ART UNIT 3749